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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/405,176	09/24/1999	HIROYUKI SHINBATA	35.C13853	9205

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EXAMINER

KIM, CHONG R

ART UNIT	PAPER NUMBER
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2623

DATE MAILED: 07/14/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/405,176

Applicant(s)

SHINBATA, HIROYUKI

Examiner

Charles Kim

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 41-54 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 41-54 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 October 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 27, 2004 has been entered.

Claim Objections

The following quotations of 37 CFR § 1.75(a) and (d)(1) are the basis of objection:

(a) The specification must conclude with a claim particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention or discovery.

(d)(1) The claim or claims must conform to the invention as set forth in the remainder of the specification and the terms and phrases used in the claims must find clear support or antecedent basis in the description so that the meaning of the terms in the claims may be ascertainable by reference to the description. (See § 1.58(a)).

2. Claims 41-54 are objected to under 37 CFR § 1.75 (a) and (d)(1) as failing to particularly point out and distinctly claim the subject matter which the applicant regards as his invention or discovery.

Referring to claim 41, the phrase "calculating a statistic from the pixel values within a certain range in the image including the coordinates" in lines 8-9 renders the claim ambiguous due to grammatical errors. It appears that the applicant intended the phrase to read "calculating a

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statistic from the pixel values in the image that are within a certain range from the coordinates”.

Similar objection are applicable to claims 51-54. Appropriate correction is required.

Referring to claim 44, the phrase “the maximum value” in lines 3-4 lacks antecedent basis. It appears that the applicant intended the phrase to read “a maximum value”. Appropriate correction is required.

Referring to claim 46, the phrase “the minimum value” in lines 3-4 lacks antecedent basis. It appears that the applicant intended the phrase to read “a minimum value”. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 41-54 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Referring to claim 1, the phrase “changing pixel values constructing the subject; obtaining added values by adding, in one direction, the changed pixel values; determining coordinates in the subject based on the added values” in lines 4-7 is not sufficiently described in

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the applicant's specification. The closest instance to this feature appears to be on page 37, line 19-page 38, line 8 and page 46, lines 4-17. However, the above cited portions of the applicant's specification merely states that the pixels are scanned in the y-axis direction to calculate average pixel values, and the coordinates of the extraction area are determined based on the average values. The Examiner was unable to find support in the applicant's specification for changing pixel values constructing the subject, obtaining added values by adding, in one direction, the changed pixel values, and determining coordinates in the subject based on the added values, as claimed. Similar rejections are applicable to claims 51-53.

Referring to claim 43, the phrase "wherein said changing step includes counting the total number of pixels included in an area linearly extending from one contour line of the subject to the other contour line of the subject in the one direction, and dividing the pixel values included in the linearly extending area by the corresponding total number counted" in lines 1-5 is not sufficiently described in the applicant's specification. The closest instance to this feature appears to be on page 37, line 19-page 38, line 8 and page 46, lines 4-17. However, the above cited portions of the applicant's specification merely states that the pixels are scanned in the y-axis direction to calculate an average pixel value. The Examiner was unable to find support in the applicant's specification for counting the total number of pixels included in an area linearly extending from one contour line of the subject to the other contour line of the subject in the one direction, and dividing the pixel values included in the linearly extending area by the corresponding total number counted, as claimed.

Referring to claim 54, the phrase "a projection preparing circuit for calculating the total number of the pixels in an area linearly extending from one contour line of the subject to the

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other contour line of the subject in one direction, dividing the pixel values included in the linearly extending area by the corresponding total number, and obtaining added values by adding the divided pixel values in one direction” in lines 10-14 is not sufficiently described in the applicant’s specification. The closest instance to this feature appears to be on page 37, line 19- page 38, line 8 and page 46, lines 4-17. However, the above cited portions of the applicant’s specification merely states that the pixels are scanned in the y-axis direction to calculate an average pixel value. The Examiner was unable to find support in the applicant’s specification for calculating the total number of the pixels in an area linearly extending from one contour line of the subject to the other contour line of the subject in one direction, dividing the pixel values included in the linearly extending area by the corresponding total number, and obtaining added values by adding the divided pixel values in one direction, as claimed.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 42, 43/42, 44/43/42, 45/42, 46/45/42, 47/42, 48/47/42 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Referring to claim 42, the phrase “pixels within a certain distance from the pixels” in line 4 renders the claim indefinite because it is unclear what is being claimed. More specifically, it is unclear which pixels the second instance of “pixels” is referring to.

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Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 41, 49, 51-53 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Kido et al., U.S. Patent No. 5,732,149 ("Kido") and Nakajima, U.S. Patent No. 4,873,437 ("Nakajima").

Referring to claim 41 as best understood, Kido discloses a gradation conversion method for a radiation image photographed by a radiation photographing apparatus, the method comprising the steps of:

- a. extracting a subject (irradiation field portion) from the radiation image (col. 2, lines 18-25 and figure 17),
- b. obtaining added values by adding, in one direction, the pixel values (col. 1, line 65-col. 2, line 4 and figures 16-17. Note that the "projection of the longitudinal and lateral directions" in col. 2, line 1 is obtained by adding pixel values in one direction, see figure 17),
- c. determining coordinates in the subject based on the added values [col. 1, line 65-col. 2, line 4 and figures 16-17. Note that the coordinates of the "concerned region" is determined based on the local maximum and local minimum of the added values (projection)],
- d. calculating a statistic (histogram) from the pixel values in the image that are within a certain range from the coordinates (col. 1, line 65-col. 2, line 4 and figures 16-17),

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e. forming a gradation processing condition based on the statistic (col. 1, line 65-col. 2, line 4),

f. converting the radiation image by using the gradation processing condition formed (col. 2, lines 4-17).

Kido does not explicitly disclose the step of changing pixel values constructing the subject. However, Official notice is taken that the step of changing pixel values were exceedingly well known in the art. Therefore, it would have been obvious to include the step of changing pixel values constructing the subject in the method of Kido. The suggestion/motivation for doing so would have been to provide the image data in the required format for further processing (such as gradation processing).

Kido also does not explicitly disclose a gradation conversion curve (Note that Kido discloses a gradation processing condition). However, gradation conversion curves were exceedingly well known in the art. For example, Nakajima discloses that a gradation processing condition can be represented by a gradation conversion curve (col. 9, lines 32-40 and figure 4).

Kido and Nakajima are combinable because they are both concerned with gradation conversion methods for radiation images. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the gradation processing condition of Kido so that it is represented by a gradation conversion curve, as taught by Nakajima. The suggestion/motivation for doing so would have been provide a visual representation of the gradation processing conditions. Therefore, it would have been obvious to combine Kido with Nakajima to obtain the invention as specified in claim 41.

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Referring to claim 49, Kido further discloses the steps of causing an X-ray irradiating unit to irradiate the subject, and converting radiation passed the subject into a radiation image by a two-dimensional sensor (col. 1, lines 16-40).

Referring to claims 51-53, see the rejection of at least claim 41 above.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Terashita U.S. Patent No. 5,790, 280 discloses a method for gradation conversion that is based on an average density value.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles Kim whose telephone number is 703-306-4038. The examiner can normally be reached on Mon thru Thurs 8:30am to 6pm and alternating Fri 9:30am to 6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on 703-308-6604. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.


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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



ck

July 7, 2004



Jon Chang
Primary Examiner